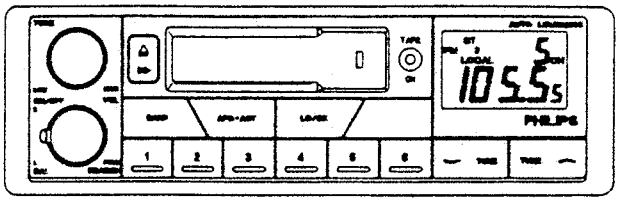
Cassette car radio 79DC404/02
79DC410/00R
69DC410/19R
79DC414/02R

Service
Service
Service



For repair information of the cassette deck see Service Manual of "Car cassette deck TN303ZX".

ServiceManual

12 V

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1.1 TECHNICAL SPECIFICATIONS

General

Power supply	: +14.4 VDC
Fuse	: 4 A
Dimensions (w x h x d)	: 178 x 50 x 150 mm

Radio

LW - wave range	: 153 – 281 kHz
MW - wave range	: 522 – 1620 kHz
FM - wave range	: 87.5 – 108 MHz
LW tuning grid	: 1 kHz
MW tuning grid	: 9 kHz
FM tuning grid	: 50 kHz
IF-LW/MW	: 450 kHz
IF-FM	: 10.7 MHz
Sensitivity for 26 dB S/N	: ≤ 50 µV (LW at 207 kHz) ≤ 30 µV (MW at 1053 kHz) ≤ 8 µV (FM at 98 MHz)
Limiting point α – 3 dB	: 14 dBµV ± 6 dBµV
10 dB crosstalk	: 43 µV ± 3µV

Cassette Deck TN303ZX

Number of Tracks	: 2 x 2
Tape speed	: 4.76 cm/sec.
Wow and Flutter	: ≤ 0.35 %
Crosstalk	: > 35 dB

Amplifier

Output power (D ≤ 10%)	: 2 x 4W (4Ω load)
Tone effect	: 19 dB at 10 KHz
Loudness	: + 8 dB at 60 Hz + 5 dB at 10 kHz

1.2 ACCESSORIES

Instructions for use (DC414, DC410/00 only)	: 4822 736 21219
Instructions for use (DC410/19R only)	: 4822 736 21282
Instructions for use (DC404/02 only)	: 4822 736 21295
Retractable unit	: 4822 691 10355
Mounting sleeve (Non-retract version)	: 4822 423 90185
Accessory kit (Retract version)	: 4822 321 61409
Rim for front (Non-retract)	: 4822 466 62088
U-bracket (Non-retract)	: 4822 404 21193

3.1 ESD

All IC's and many other semi-conductors are susceptible to electrostatic discharges (ESD).

Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected to the same potentail as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

3.2 INSTRUCTIONS FOR USE

SOUND ADJUSTMENT

Volume, balance and tone are adjusted using the rotary knobs.

RADIO RECEPTION

- To select FM1, FM2, FM3, MW1, MW2 or LW, press the BAND selector one or more times.

Note: FM1, FM2 and FM3 cover the same frequencies. The same is true of MW1 and MW2. The extra bands increase the possible number of presets.

Local/distant search sensitivity

You can select the search sensitivity (local or distant) to determine whether or not the radio accepts weaker stations during search tuning.

- Press the LO/DX selector to switch between local and distant search sensitivity.

The display shows 'LOCAL' to indicate local search sensitivity

Mono/Stereo

When selecting the FM band, the radio automatically switches to stereo mode. However, the display shows 'ST' only when a stereo signal is received.

If the station becomes weaker, the radio changes automatically and smoothly to mono reproduction. If the station becomes stronger again, the radio changes back to stereo.

TUNING TO A STATION

You can tune to a station using any of the following methods:

- Search tuning
- Manual tuning
- Recalling a preset station
- Auto Preset Store
- Scanning preset stations

SEARCH TUNING

You can quickly search for the next station in a band.

- Push the SEARCH knob to start searching.

Search tuning is stopped if:

- a station is found
- another button is pressed
- the radio is switched off

To search for another station, press the same key again.

When the highest frequency (e.g. 108 MHz for FM) is reached the tuning automatically switches to the lowest frequency (e.g. 87.5 MHz for FM) and continues searching.

If the radio tunes to a station which has been stored on one of the presets, the display also shows the preset number.

If no station is found after the whole band has been searched in local (LOCAL) mode, the radio switches to a higher sensitivity level. If again no station is found, the radio gives a beep.

MANUAL TUNING

- Select the desired wave band with the BAND selector.
- Select the desired frequency with the TUNE ˅ or TUNE ˄ key.

Keeping the key pressed changes the frequency quickly.

Briefly pressing the key changes the frequency by one step (0.05 MHz on FM, 9 kHz on MW or 1 kHz on LW)

PRESETS

You can store stations for **each** waveband on the preset buttons 1-6.

Storing a station

- Select the desired waveband using the BAND key.
- Tune-in the desired station using TUNE ˅ and TUNE ˄.
- Keep the desired preset key pressed until the radio gives a confirmation beep – about 2 seconds.

The display shows: the waveband, the frequency and the preset number on which the station has been stored.

- If the preset key is pressed for less than 2 seconds, you recall the previously stored frequency instead of storing the new frequency.

Recalling a station

- Select the desired waveband using the BAND key.
- Briefly press the desired preset key.

AUTO PRESET STORE

Auto Preset Store is an automatic search tuning system which can store six stations.

When you use Auto Preset Store, the new stations ***replace*** *any stations previously stored on the current wave band.*

- Select desired waveband using the BAND selector.
- Keep the APS key pressed for 2 seconds.

You will hear a beep, the radio mutes and the display shows the current waveband flashing.

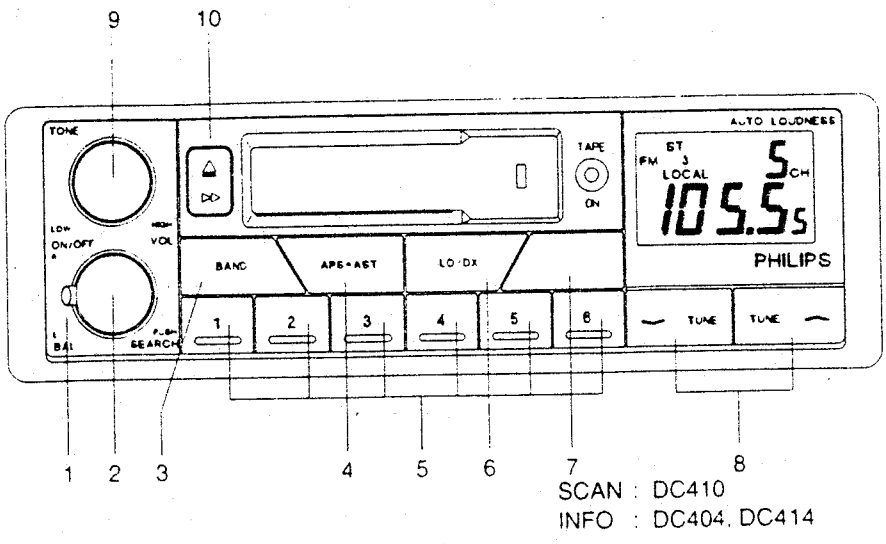
The radio starts searching from the current frequency, first for strong stations and then for weaker stations.

The radio stores six stations. When it has finished you hear a beep. You then hear the Auto Preset Store station on preset 1.

Auto Preset Store stations are selected using presets 1-6 in the normal way.

PRESET SCAN (DC410 only)

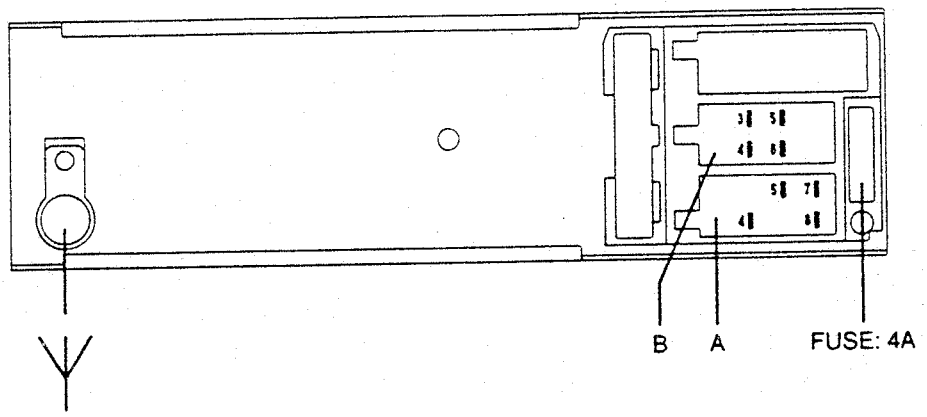
Scan gives you an impression of all the stations stored on the presets of the current waveband.



SCAN : DC410
INFO : DC404, DC414

2.1 EXPLANATION OF CONTROLS

1 Balance control
2 On/off; Volume; Search tuning (push)
3 Waveband selector
4 Auto preset scan; Auto memory store control
5 Preset program and recall buttons (1-6)
6 Local-distant tuning control
7 Scan button (DC410 only)
- or -
Info button (DC404 and DC414 only)
8 Manual tune up and down
9 Tone control
10 Tape eject; Fast winding



2.2 EXPLANATION OF CONNECTIONS

(Mounting wire colors given in parenthesis)

A4 +14.4V DC permanent (yellow/red)
A5 Automatic aerial (blue)
A7 +14.4V DC switched (red)
A8 Supply ground (brown)

B3 Speaker Right (grey)
B4 Speaker R return (grey/black)
B5 Speaker Left (green)
B6 Speaker Left return (green/black)

- Pressing the SCAN key starts and stops scanning. On stopping the radio remains tuned to the last-scanned preset station.
- Each preset station can be heard in turn for 5 seconds. After the last station, scan returns to the first station.

Note: Pressing a preset key also stops the scan function.

CASSETTE DECK OPERATION

It is highly recommended to use only C-60 and C-90 cassettes.

Always ensure that a tape is NOT LOADED in the deck before pulling the set out of the retractable unit.

Playback

- Hold the cassette with the open side to the right and the full reel towards you.
- Insert a tape into the compartment until the eject button springs forwars.

The radio mutes and playback starts.

Stopping playback

- Press the tape eject knob fully.

The unit will switch over to radio reception and the cassette is partially ejected.

Fast-forward winding

- Press the fast winding button half-way until it locks.
- Press it again to stop fast winding.

This button springs forward and playback is resumed.

End of the tape

When the end of the tape is reached, the unit automatically switches to radio reception.

TRAFFIC INFORMATION (DC404/DC414 models only)

This car radio can identify FM stations which broadcast traffic information on the SK/DK traffic system. This enables you to easily tune to a station that broadcasts traffic information. If you wish, you can allow traffic messages to interrupt tape playback.

Note: Traffic information is available only on the FM wave band.

If the currently-tuned station broadcasts SK/DK traffic information, 'SK' shows on the display.

Tuning to a TRAFFIC INFORMATION station.

- To tune to a station which broadcasts traffic messages, press the INFO button.

The radio is now in **INFO** mode. The display shows 'INFO'. When the radio is in INFO mode, only traffic information stations can be selected using the search and auto preset store functions.

When the radio is in INFO mode, the radio automatically searches for another traffic information station if:

- You are not tuned to a station using the SK/DK system.
- The currently tuned station becomes to weak.
- The broadcaster temporarily switches off the SK signal.

INFO mode is switched off if you use manual tuning or if you select a preset station without SK signal.

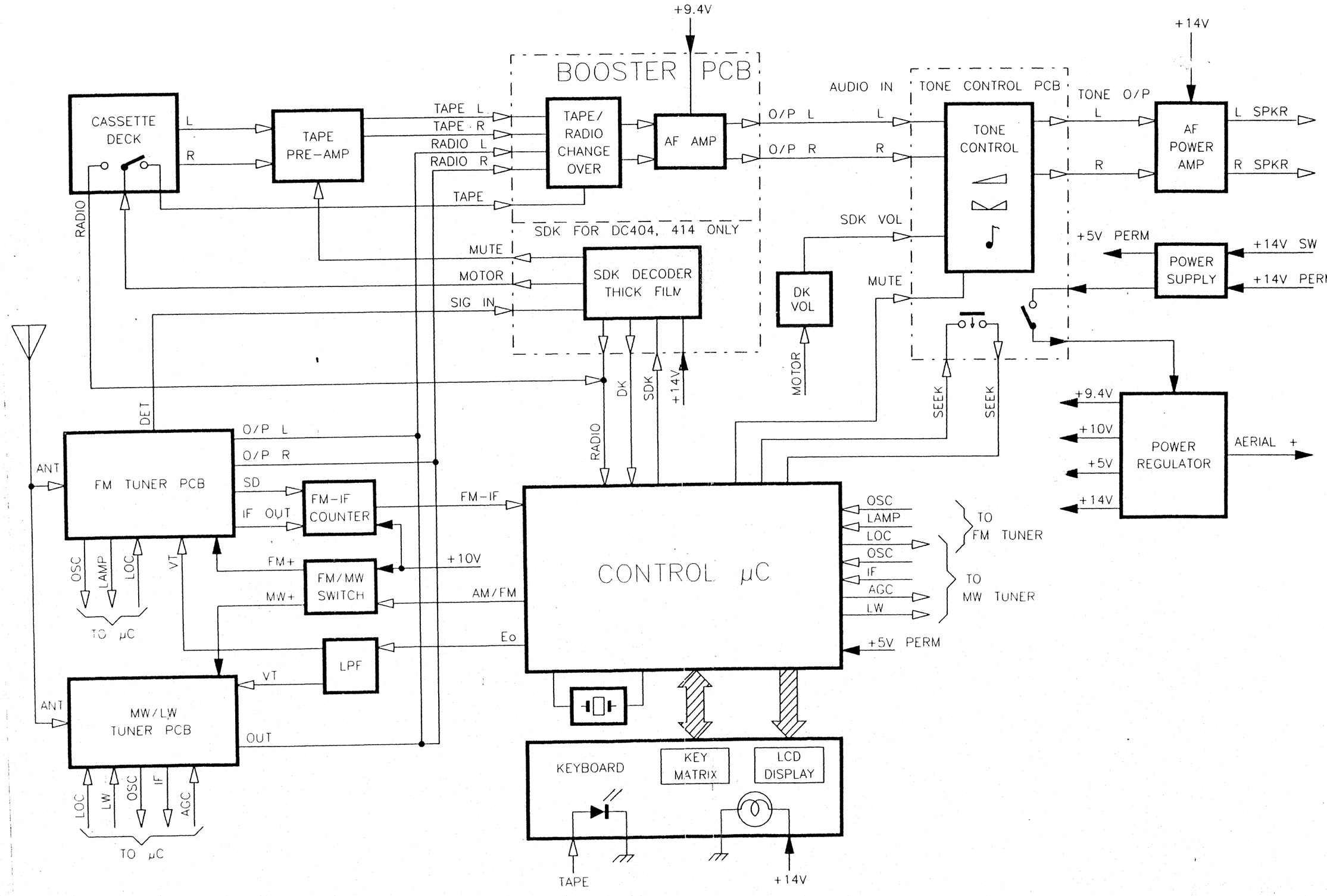
Traffic announcements during tape playback

If the radio is in INFO mode and you play a cassette, tape playback will be interrupted by traffic messages when broadcast. The volume is automatically switched to a minimum factory-set level.

3.4 TROUBLE SHOOTING GUIDE

SYMPTOM	CAUSE/REMEDY
Cannot switch unit on.	– Brown fuse blown.
Display operates but no audio output.	– Defective power-amplifier: Check IC3. – Defective 9.5 V regulator: Check Q3, Q4, Q12 and Q13.
No FM or weak sensitivity.	– Defective FM tuner. – Defective diode: Check D35, D36, D37 and D40.
No MW/LW or weak sensitivity.	– Defective AM tuner.
SEARCH cannot find a station.	– Defective IC301 (FM) – Defective Q9, Q11 or Q213 (MW/LW)
No back-up power supply on memory.	– Defective battery cell. – Defective circuit of Q1.

4.0 BLOCK DIAGRAM



5.1 ALIGNMENT TABLE

For more information see general information "General alignment procdures for car radio"

Alignment	SK		◇	▭	⌀	
Quadrature detector	FM	98 MHz, 10 µV Δf = 75 KHz	B		L103	1 Align for symetrical distortion on sine wave
Stereo seperation	FM	98 MHz, 2 mV stereo signal L only	B		VR801	L 1 – R 2 maximum separation
SDS (10 dB cross talk)	FM	98 MHz, 2 mV stereo signal L only	B		VR355	L 1 – R 2 = 10 dB seperation
AM-search level	MW	999 kHz, 300 µV f mod. = 1 kHz local mode	A		VR201	Adjust for station lock

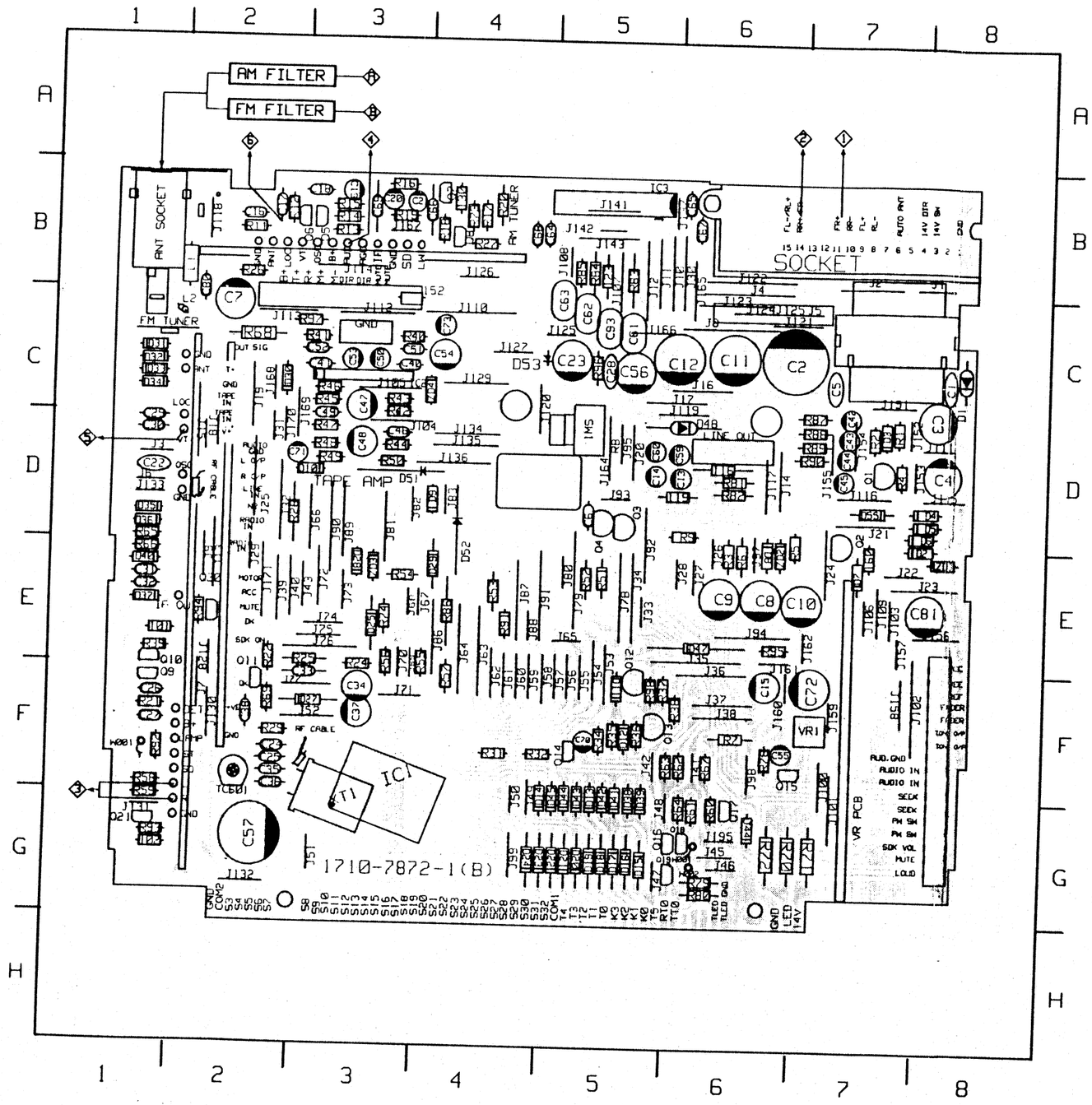
5.2 CHECK TABLE

For more information see general information "General alignment procdures for car radio"

CHECK	SK		◇	▭	Setting of Controls	
VC-FM	FM			87.5 MHz		5 1.2 ± 0.1 V-DC
				108 MHz		5 ≤ 8 V-DC
VC-MW	MW			522 kHz		6 1.2 ± 0.1 V-DC
				1620 kHz		6 7.9 ± 0.2 V-DC
VC-LW	LW			153 kHz		6 1.0 ± 0.1 V-DC
FM-Mute	FM	98 MHz, 1 mV	B			1 0 dB (2000 mV)
		No signal				1 ≤ –24 dB
Demodulated FM-level	FM	98.1 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz	B			3 80 mV ± 3 dB
Demodulated AM-level	MW	999 kHz, 1 mV 1 kHz, 30% AM	A			4 120 mV ± 3 dB

CHECK	SK		◇	▭	Setting of Controls	
Cross talk	FM	98 MHz, 2 mV stereo signal (L + R)	B		+	L 1 0 dB (2000 mV) R 2
		98 MHz, 2 mV stereo – R				R 2 – L 1 ≥ 26 dB
SDS/10 dB Cross talk	FM	98 MHz, 2 mV stereo signal (L + R)	B		+	L 1 0 dB (2000 mV) R 2
		98 MHz, 2 mV stereo –R				R 2 – L 1 ≥ 10 dB
26 dB – SNR	FM	98 MHz, 6 µV Δf = 22.5 kHz f mod. = 1 kHz	B			1 0 dB (2000 mV)
		98 MHz, 6 µV without mod.				1 ≤ –26 dB
	MW	999 kHz, 30 µV 1 kHz, 30% AM	A			1 0 dB (2000 mV)
		999 kHz, 30 µV without mod.				1 ≤ –26 dB
	LW	207 kHz, 56 µV 1 kHz, 30% AM	A			1 0 dB (2000 mV)
		207 kHz, 56 µV without mod.				1 ≤ –26 dB
SDK sensivity	FM + INFO	98.1 MHz, 60 µV Δf = 22.5 kHz f mod. = 1 kHz + SK + BK + DK	B			**INFO SK** in display. Radio mode overrides tape mode when INFO "on".

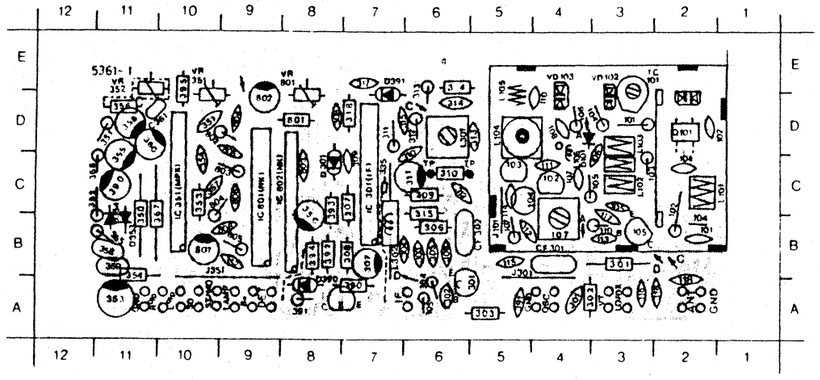
6.1 MAIN BOARD LAYOUT



101	E1	C68	B4	J106	E7	J25	D2	J9	E2	R47	D3
102	G1	C69	B3	J107	C5	J26	E6	J90	E3	R48	D3
116	D6	C7	C2	J108	B5	J27	E6	J91	E5	R49	D3
119	D5	C71	D2	J109	E7	J28	E6	J92	E5	R5	E7
123	B5	C72	F7	J11	B5	J29	E2	J93	D5	R50	D3
130	B4	C73	C4	J110	C4	J3	D1	J94	E6	R51	E5
160	E7	C8	E6	J111	D7	J30	B6	J95	D5	R52	E5
C1	C7	C80	C2	J112	C3	J31	D2	J97	E6	R53	E4
C10	E6	C81	E7	J113	C2	J32	D2	J98	F6	R54	E3
C11	C6	C9	E6	J114	B3	J33	E5	J99	G4	R55	F4
C12	C5	C93	C5	J115	D7	J34	E5	L1	B2	R56	F3
C13	D6	D1	C7	J116	D7	J35	E6	Q1	D7	R57	F4
C14	D5	D10	D2	J117	D6	J36	F6	Q10	F1	R58	F1
C15	F6	D11	F5	J118	B2	J37	F6	Q11	F2	R59	G1
C16	B2	D12	F5	J119	C5	J38	F6	Q12	E5	R6	E6
C17	B2	D13	G5	J12	C5	J39	E2	Q13	F6	R60	G6
C18	B3	D14	G5	J120	D4	J4	B6	Q14	F5	R61	G6
C19	B3	D15	G5	J121	.5	J40	E3	Q15	F6	R62	F6
C2	C6	D16	G5	J122	B6	J41	F6	Q16	G5	R63	F6
C20	B3	D17	G5	J123	C6	J42	F5	Q17	G6	R64	G6
C21	B3	D18	G5	J124	C6	J43	E3	Q18	G6	R65	E1
C22	D1	D19	G5	J125	C4	J44	G6	Q19	G5	R66	E1
C23	C5	D2	E7	J125	C6	J45	G6	Q2	D7	R67	F6
C24	F2	D20	G5	J126	B4	J46	G6	Q20	E2	R68	C2
C25	F2	D21	G5	J127	C4	J47	G5	Q21	G1	R69	F2
C26	F1	D22	G5	J128	E2	J48	G5	Q3	D5	R7	F6
C27	F1	D23	G4	J129	C4	J49	G4	Q4	E5	R70	G6
C28	C5	D24	G4	J13	E2	J5	C7	Q5	B3	R71	G7
C29	D1	D25	E3	J130	F2	J50	G4	Q6	B3	R72	G6
C3	C7	D27	F3	J131	G1	J51	G3	Q7	B4	R73	B4
C30	D1	D28	E3	J132	G2	J52	F3	Q8	B4	R74	E3
C31	E1	D29	E4	J133	D1	J53	F5	Q9	F1	R78	F6
C32	E1	D3	D7	J134	D4	J54	F5	R1	D7	R79	G6
C33	F2	D30	C2	J135	D4	J55	F5	R11	B2	R8	D5
C34	F3	D31	C1	J136	D4	J56	F5	R12	B2	R80	G6
C35	F2	D32	C1	J137	B6	J57	F5	R13	B3	R81	D6
C36	F2	D33	C1	J14	D6	J58	F5	R14	B3	R82	D6
C37	F3	D34	C1	J15	D2	J59	F4	R15	B3	R83	B5
C38	F2	D35	D1	J151	C7	J6	D1	R16	B3	R84	B5
C4	D7	D36	D1	J152	D7	J60	F4	R17	B4	R85	B5
C40	C3	D37	E1	J153	D7	J61	F4	R18	B4	R86	E4
C41	C3	D38	G5	J154	D7	J62	F4	R19	B3	R87	D7
C42	D7	D39	G5	J155	D7	J63	E4	R2	D7	R88	D7
C43	D7	D4	D7	J156	E7	J64	E4	R20	B4	R89	D7
C44	D7	D40	E1	J157	E7	J65	E5	R21	F1	R9	D6
C45	D7	D41	G5	J158	F7	J66	D3	R22	F2	R91	E4
C46	D3	D42	G5	J159	F7	J67	E4	R24	F3	R92	F1
C47	D3	D43	G5	J16	C6	J68	E3	R25	E2	R93	G1
C48	D3	D44	G5	J160	F6	J69	F3	R26	B2	R94	E2
C49	D3	D45	G5	J161	E6	J7	F2	R27	B4	R95	E6
C5	C7	D47	E6	J162	E7	J70	F3	R28	D2	R96	C5
C50	C3	D48	D6	J164	D5	J71	F3	R29	F2	R97	C2
C51	C3	D5	D7	J165	C6	J72	E3	R3	E6	R98	F5
C52	C3	D51	D3	J166	C5	J73	E3	R31	F4	SW1	D5
C53	C3	D52	E4	J167	B3	J74	E3	R32	F4	TC601	G2
C54	C4	D55	D7	J168	C2	J75	E3	R34	F5	XT1	G3
C55	F6	D6	D7	J169	D3	J76	E3	R35	F5	ZD1	E7
C56	C5	D7	E7	J17	C5	J77	F2	R36	F5	ZD2	E6
C57	G2	D8	E6	J170	D2	J78	E5	R37	F5	ZD3	E3
C59	D6	D9	D4	J171	E2	J79	E5	R38	F6	ZD4	C4
C6	D5	IC2	C3	J18	D2	J8	C6	R39	E1		
C60	D5	J1	B7	J19	C2	J80	E5	R4	D7		
C61	C5	J10	B6	J195	G6	J81	E3	R40	C3		
C62	C5	J100	G7	J2	B7	J82	D3	R41	C3		
C63	C5	J101	G7	J20	D5	J83	D4	R42	D3		
C64	B4	J102	F7	J21	D7	J86	E4	R43	C3		
C65	B6	J103	E7	J22	E7	J87	E4	R44	D3		
C66	B4	J104	D3	J23	E7	J88	E4	R45	C3		
C67	B6	J105	C3	J24	E7	J89	E3	R46	C3		

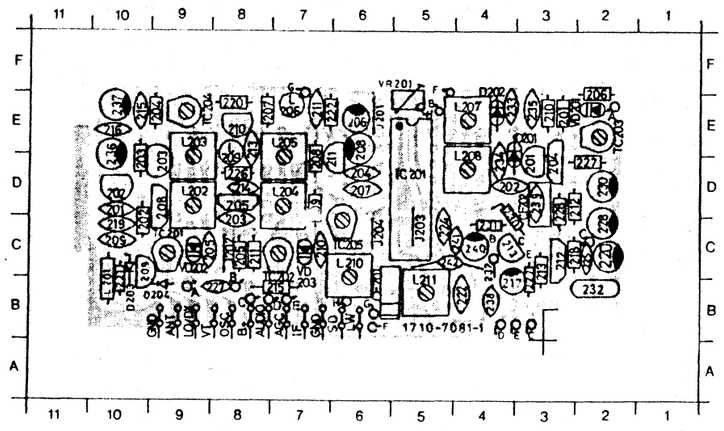
6.2 FM BOARD

C101	B1	C114	C5	C308	D8	C353	A11	C802	D9	D391	E7	L107	B4	R102	B2	R305	A6	R335	C7	R393	C8	VR351	E10
C102	D1	C115	B5	C310	D6	C354	D10	C803	C8	IC301	C7	L301	D6	R103	D3	R307	C7	R350	C11	R395	E10	VR352	E11
C104	C2	C117	C3	C311	C6	C355	D11	C804	D9	IC351	C10	L302	B7	R104	D3	R308	B7	R351	D11	R801	D8	VR801	E8
C105	C3	C118	B2	C312	C6	C356	D11	C805	D9	IC801	C9I	Q101	D2	R105	C3	R309	C6	R354	B11	R802	D9		
C106	D3	C301	A4	C314	D6	C357	C10	C806	C9	C802	C8	Q102	C4	R106	D4	R310	C6	R355	B11	R803	C9		
C107	C4	C302	A6	C315	D6	C358	B11	C807	B10	L101	C2	Q103	C5	R107	B5	R311	D7	R356	D11	R804	C9		
C108	D4	C303	B6	C317	E7	C359	B11	C808	B9	L102	C3	Q104	C5	R110	B3	R312	D6	R367	C10	R805	B9		
C110	E4	C304	B6	C318	A2	C360	D11	CF301	B4	L103	D3	Q105	B3	R301	B3	R313	E6	R368	C11	TC101	E3		
C111	C4	C305	B6	C350	C8	C361	D11	CF302	B6	L104	D5	Q301	B6	R302	A3	R314	E6	R390	A7	VD101	E2		
C112	B5	C306	B6	C351	D10	C390	C11	D101	D3	L105	E5	Q302	A7	R303	A5	R315	C6	R391	A8	VD102	E3		
C113	B3	C307	B7	C352	B9	C391	A5	D301	C8	L106	D4	R101	D3	R304	B6	R318	D7	R392	B8	VD103	E4		



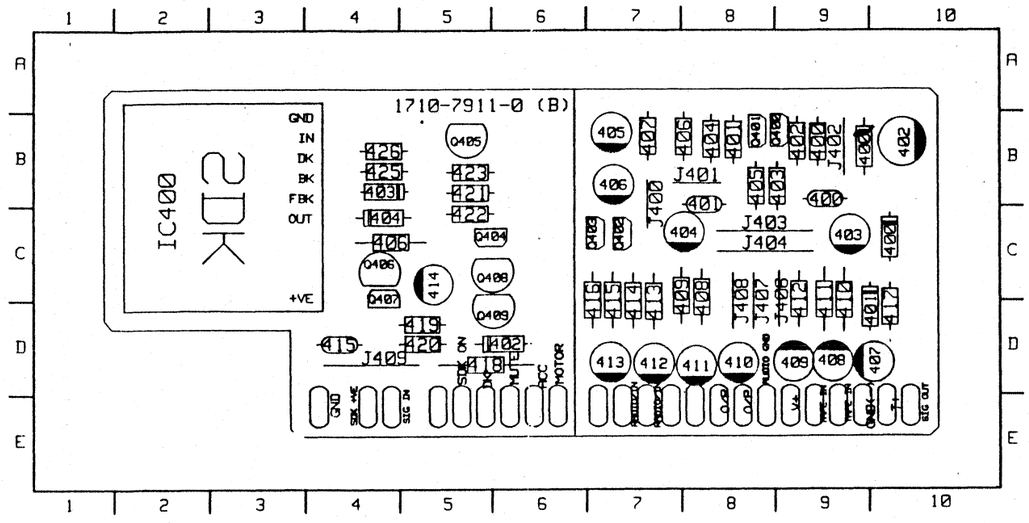
6.3 MW/LW BOARD

C201	D10	C209	C10	C219	C10	C232	B2	C240	C4	L202	D9	L210	C6	Q209	C10	R204	E9	R212	D3	R227	C3	TC203	E2
C202	D4	C210	C7	C220	C2	C233	E4	C241	C4	L203	D9	L211	B5	Q210	E8	R205	C8	R213	C3	R228	D3	TC204	E9
C203	C8	C211	E7	C222	B4	C234	D4	C242	C5	L204	D7	Q201	D3	Q211	D6	R206	E2	R215	B7	R229	D2	TC205	C6
C204	D6	C213	E8	C224	C5	C235	E3	CF201	B6	L205	D7	Q202	D10	Q212	C3	R207	E8	R218	C3	R230	D4	VD201	E2
C205	C9	C214	D8	C225	C2	C236	E10	D201	D4	L206	E7	Q203	D9	Q213	C4	R208	D7	R220	E8	R231	C4	VD202	C9
C206	E6	C215	E10	C227	B8	C237	E10	D202	E4	L207	E4	Q204	D3	R201	E3	R209	D7	R221	C10	R232	C4	VD203	C7
C207	D6	C216	E10	C228	C2	C238	B4	IC201	D5	L208	D4	Q205	D8	R202	C10	R210	E3	R222	E7	TC201	C9	VR201	E5
C208	E6	C217	B4	C230	D1	C239	D3	L201	B10	L209	E8	Q208	D9	R203	D10	R211	C8	R226	D8	TC202	C7		



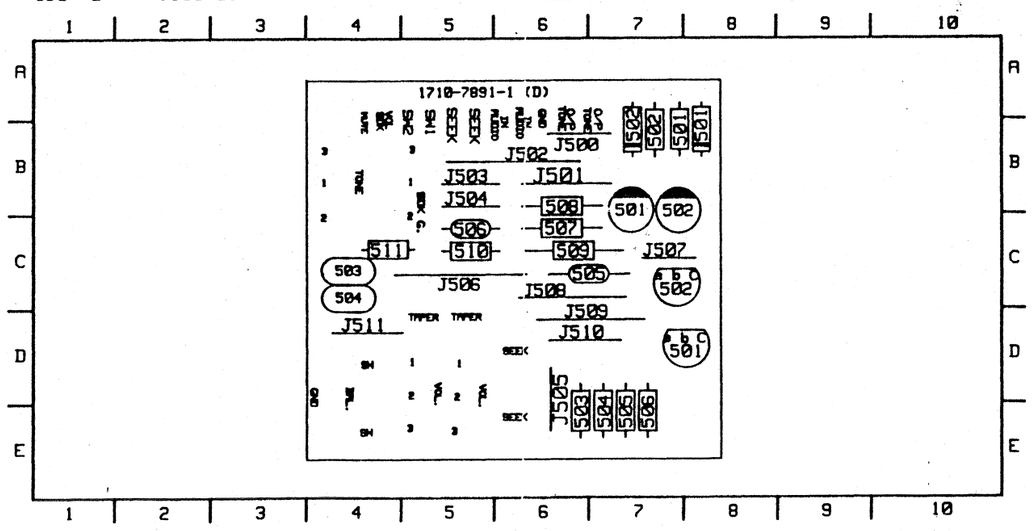
6.4 TAPE BOOSTER/SDK BOARD

C400	B9	C408	D9	D400	B9	J401	B8	Q400	B8	Q408	C5	R406	B7	R413	D7	R421	B5		
C401	B8	C409	D9	D400	C9	J402	B9	Q401	B9	Q409	D5	R406	C5	R414	D7	R422	C5		
C402	B9	C410	D8	D401	D9	J403	C8	Q402	C7	R400	B9	R407	B7	R415	D7	R423	B5		
C403	C9	C411	D8	D402	D6	J404	C8	Q403	C7	R401	B8	R408	D8	R416	D7	R425	B4		
C404	C8	C412	D7	D403	B4	J406	D8	Q404	C5	R402	B9	R409	D7	R417	D9	R426	B4		
C405	B7	C413	D7	D404	C4	J407	D8	Q405	B5	R403	B9	R410	D9	R418	D6				
C406	B7	C414	D5	IC400	B3	J408	D8	Q406	C4	R404	B8	R411	D9	R419	D5				
C407	D9	C415	D4	J400	C7	J409	D4	Q407	C4	R405	B8	R412	D9	R420	D5				



6.5 TONE CONTROL BOARD

C501	C7	C505	C7	J501	B6	J506	C5	J510	D7	R503	E6	R507	C6	R511	C4				
C502	C7	C506	C5	J502	B6	J507	C7	J511	D4	R504	E7	R508	B6						
C503	C4	D502	A7	J503	B5	J508	C6	R501	B7	R505	E7	R509	C6						
C504	D4	J500	B6	J505	E6	J509	D7	R502	B7	R506	E7	R510	C5						



7.0 SURVEY OF DC VOLTAGES

IC2 UPC1228H

1 = 1.3 V
2 = 0.8 V
3 = 3 V
4 = 12 V
5 = GND
6 = 2.7 V
7 = 1.3 V
8 = 0.8 V

IC3 TDA1519

1 = 7.7 V
2,3 = 0 V
4 = 7.7 V
5 = GND
6 = 7.7 V
7 = 14.4 V
8 = 14.4 V
0 V (UNIT OFF)
9 = 7.7 V

IC201 LA1135

1 = 2.4 V
2 = 2 V
3 = 0.9 V
4 = 1 V
5 = GND
6 = 2 V
7,8 = 8.3 V
9 = 0.8 V
10 = 8.3 V
11 = 0.7 V
12 = GND
13 = 3 V
14 = 8.3 V
15 = 1.3 V
16 = 3.9 V
17 = 3 V
18 = 5.8 V
19 = 5.7 V
20 = 3 V

IC301 LA1140

1,2 = 2.5 V
3 = 2.5 V
4 = GND
5 = 2 V
6 = 0 V
7-9 = 5 V
10 = GND
11 = 5 V
12 = 9.3 V
13 = 5 V
14 = 0 V
15 = 5 V
16 = 1.3 V

IC351 LA3375

1 = 9.3 V
2 = 3.4 V
3 = 3.5 V
4 = 2.8 V
5,6 = 3.6 V
7 = 1.3 V
8 = 0.8 V
9 = GND
10 = 0.8 V
11 = 2.8 V
12 = 2.7 V
13 = 2.6 V
14 = 2.7 V
15 = 2.7 V
16 = 2.5 V

IC801 LA2110

1 = 9.3 V
2 = 3.5 V
3,4 = 4.6 V
5,6 = 4.2 V
7 = 4.8 V
8 = GND
9 = 1.7 V
10 = 3 V
11 = 0 V
12 = 2.3 V
13 = 0.1 V
14 = 0 V
15 = 4.5 V
16 = 4.5 V

IC802 DN1360B

1 = 9.3 V
2 = 4.6 V
3 = 4.2 V
4,5 = 4.5 V
6 = GND
7 = 1.7 V
8 = 3 V
9 = 4.5 V

Q1 JE8050C

e = 4.7 V
b = 5.3 V
c = 12 V

Q2 JE8050C

e = 4.3 V
b = 5 V
c = 4.7 V

Q3 JE8050C

e = 9.4 V
b = 10 V
c = 14.4 V

Q4 JE8050C

e = 10 V
b = 10.7 V
c = 14.4 V

Q5 2SC536G

e = 0.5 V
b = 1 V
c = 6.6 V

Q6 2SC536G

e = 0 V
b = 0.5 V
c = 6.6 V

Q7 2SC536G

e = 0V
b = 0.7 V
c = 0 V

Q8 2SA608G

e = 4.6 V
b = 4 V
c = 4.6 V

Q9 2SC2668

e = 0 V
b = 0 V
2 V (SEEK)
c = 10 V

Q10 2SC2668-0

e = 0 V
b = 0.7 V (SEEK)
c = 0 V
2 V (SEEK)

Q11 2SC2668

e = 0.1 V
b = 0.8 V
c = 3.3 V

Q12 JE8550C

e = 10 V
b = 9.3 V (FM)
c = 9.8 V (FM)

Q13 2SC536G

e = 9.2 V
b = 9.9 V (AM)
0.7 V (FM)
c = 10 V

Q14 2SC536G

e = 0 V
b = 0 V
c = 9.9 V

Q15 JE8050C

e = 0
b = 0 V (RADIO)
0.7 V (T+)
c = 0

Q16 2SC536G

e = 0.1 V
b = 0.7 V
c = 0.1 V

Q17 2SC536G

e = 0 V
b = 0.7 V
0 V (MUTE)
c = 0 V
3.9 V (MUTE)

Q18 2SC536G

e = 0V
b = 0V
= 0.7 V (TAPE)
c = 0.7 V
= 0 V (TAPE)

Q19 2SC536G

e = 0 V
0.2 V (SEEK)
b = 0 V
0.9 V (SEEK)
c = 0.1 V

Q20 2SA608G

e = 4.2 V
b = 3.5 V
c = 4 V (LOCAL)

Q102 2SC1923Y

e = 0 V
b = 0.6 V
c = 9 V

Q103 2N5484Z

G = 0 V
S = 0 V
D = 9 V

Q104 2SK161Y

G = 0 V
S = 0 V
D = 8.8 V

Q105 BC549

e = 0 V
b = 0 V
c = 1.2 V

Q201 2SC536G

e = 0 V
b = 0 V (MW)
= 0.6 V (LW)
c = 0.1 V (MW)
= 4.5 V (LW)

Q202 2SC930E

e = 0 V
b = 0.3 V
c = 0.5 V

Q203 2SK163M

G = 0 V
S = 0 V
D = 7.7 V

Q204 2SC536G

e = 0 V
b = 0.7 V (MW)
= 0 V (LW)
c = 0 V (MW)
= 0.6 V (LW)

Q205 2SK184GR

G = 0 V
S = 0 V
D = 7.5 V

Q208 2SC536G

e = 7.7 V
b = 2.4 V
c = 7.7 V

Q209 2SC930E

e = 0 V
b = 0.8 V
c = 0 V

Q210 2SC536G

e = 0 V
b = 6.7 V
c = 0 V

Q211 2SC536G

e = 0 V
b = 0.7 V
c = 0 V

Q212 2SA608G

e = 3 V
b = 4.7 V
c = 3 V

Q213 2SC536G

e = 0 V
b = 0.6 V
c = 0.5 V

Q301 2SC930E

e = 0 V
b = 0.7 V
c = 4.1 V

Q302 BC549

e = 0 V
b = 0.7 V
= 0 V (MONO)
c = 0 V
= 8.5 V (MONO)

Q400 2SC536G

e = 1 V
b = 1.7 V
c = 4 V

Q401 2SC536G

e = 1 V
b = 1.7 V
c = 4 V

Q402 2SJ40E

D = 0 V
S = 0 V
G = 13.8 V (TAPE)
= 0 V (RADIO)

Q403 2SJ40E

D = 0 V
S = 0 V
G = 13.8 V (TAPE)
= 0 V (RADIO)

Q404 2SA608G

e = 14.4 V
b = 14.4 V
= 13 V (DK)
c = 13.4 V
= 0 V (DK)

Q405 2SC945E

e = 0 V
= 8.8 (DK)
b = 0 V
= 9.5 V (DK)
c = 14.4 V

Q406 2SC945E

e = 0 V
b = 0.7 V
= 0 V (INFO)
c = 0 V
= 10 V (DK)

Q407 2SC536G

e = 0 V
b = 0.7 V
= 0 V (INFO)
c = 14.4 V
= 0 V (INFO)

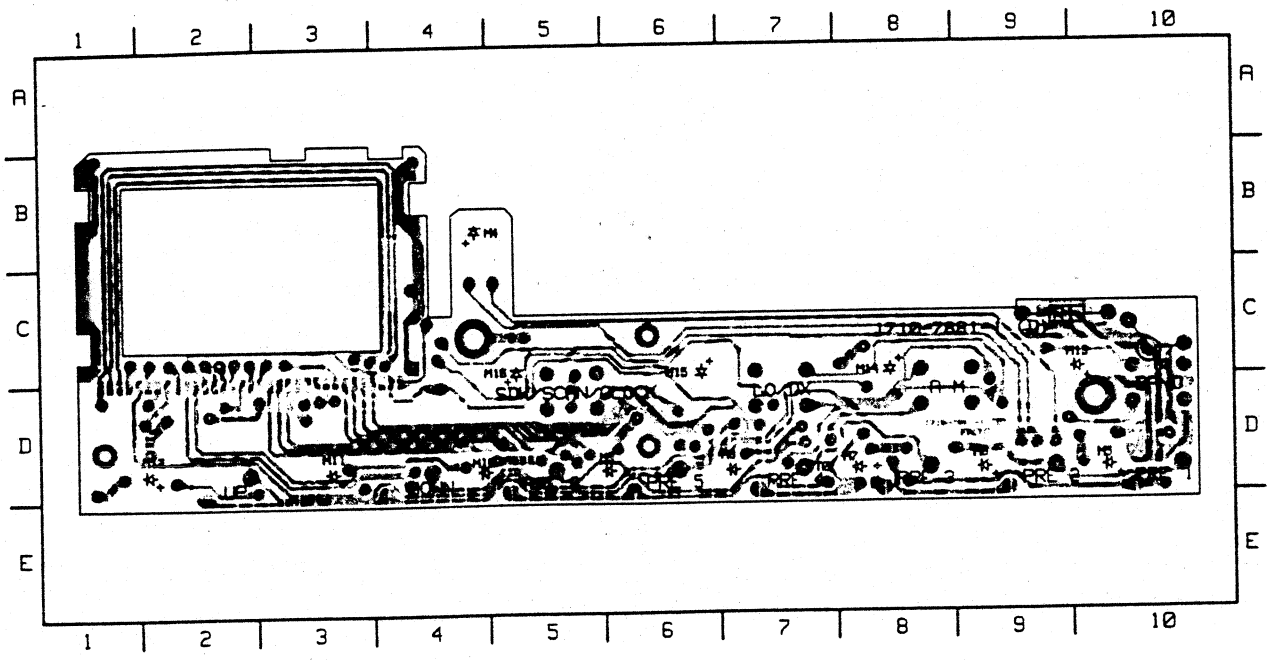
Q408 JE8550C

e = 14.4 V
b = 14.4 V
= 14.1 V (DK)
c = 13.4 V
= 0 V (DK)

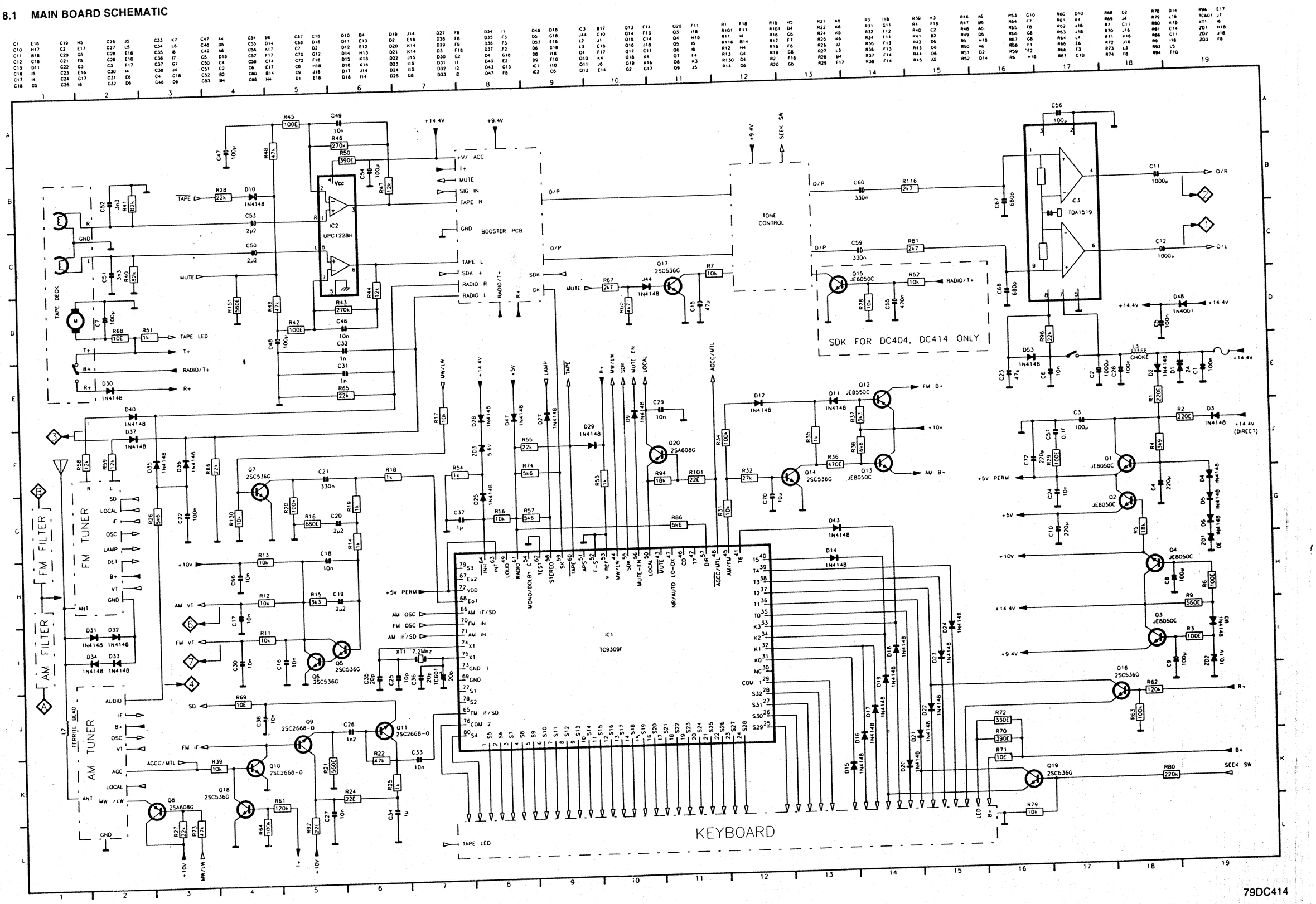
Q501 JE8050C

e = 0 V
b = 0 V
= 0.7 V (MUTE)
c = 0 V

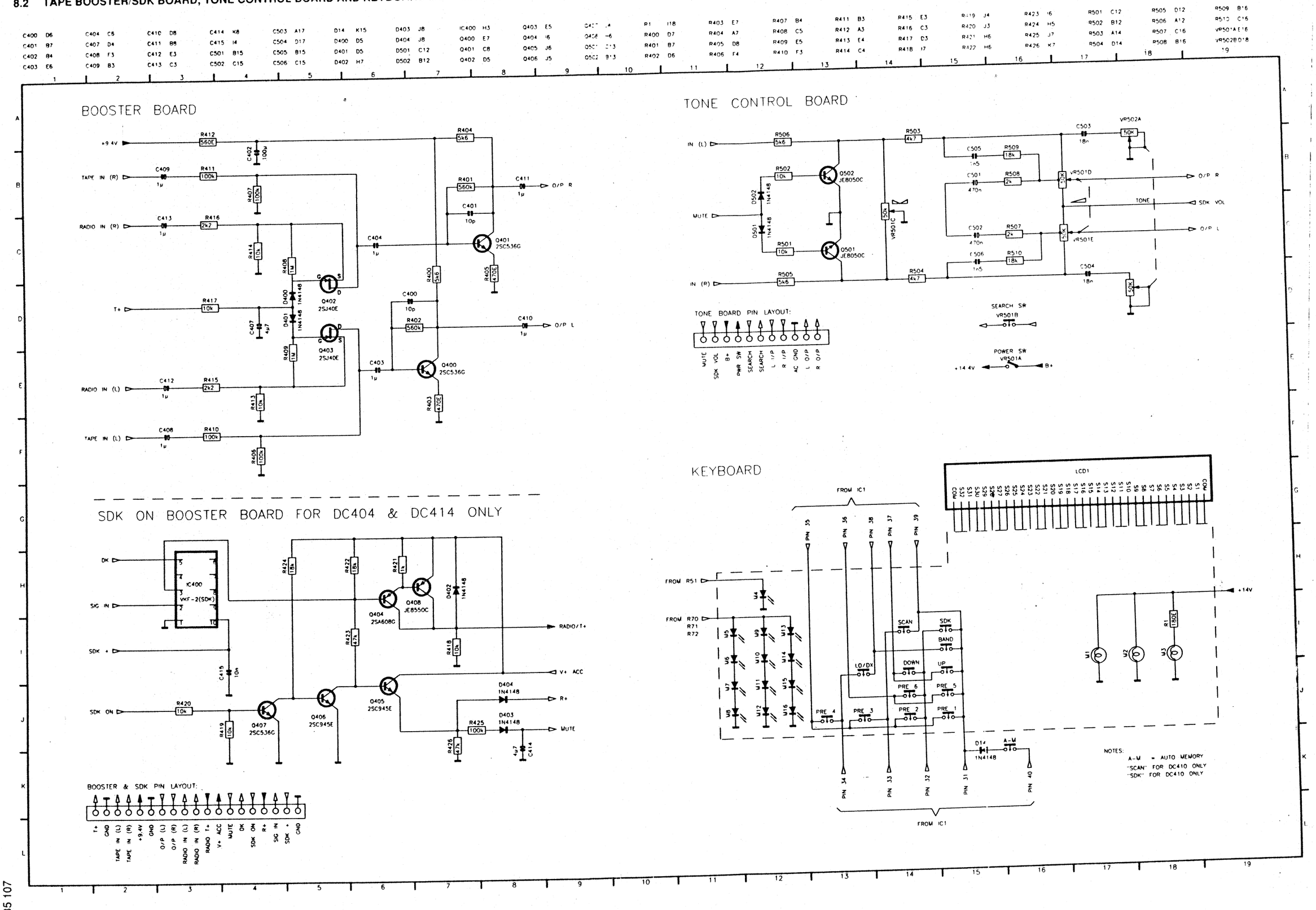
6.6 KEYBOARD



8.1 MAIN BOARD SCHEMATIC



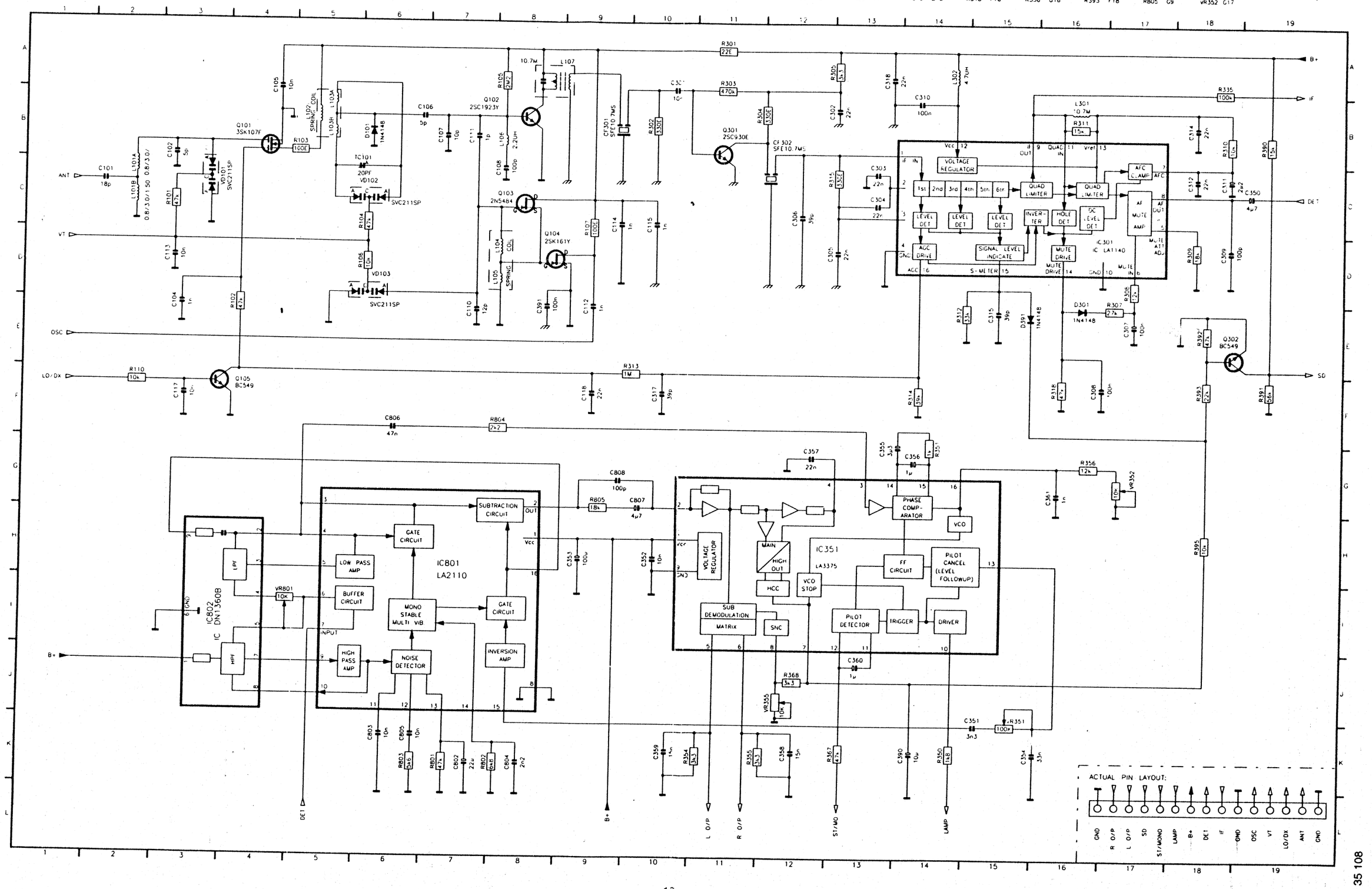
8.2 TAPE BOOSTER/SDK BOARD, TONE CONTROL BOARD AND KEYBOARD SCHEMATICS



8.3 FM TUNER BOARD

C101	C2	C108	C8	C115	C10	C304	C13	C310	B14	C318	A13	C355	G13	C361	D16	C805	K6	D101	B6	IC802	I3	L104	D8	Q101	B4	Q302	E18	R106	D6
C102	C3	C110	E7	C117	F3	C305	D12	C311	C18	C350	C18	C356	G14	C390	K14	C806	F6	D301	D16	L101A	C2	L105	D8	Q102	B7	R101	C3	R107	D9
C104	E3	C111	B7	C118	F9	C306	C12	C312	C15	C351	J15	C357	G12	C391	E8	C807	G10	D391	E15	L101B	C2	L106	B8	Q103	C8	R102	E4	R110	F2
C105	B4	C112	E9	C301	A10	C307	E17	C314	B18	C352	H10	C358	K12	C802	K7	C808	G9	IC301	D16	L102	B5	L106	A8	Q104	D8	R103	B4	R301	A11
C106	B6	C113	D3	C302	B12	C308	F16	C315	E15	C353	H9	C359	K10	C803	K6	CF301	B9	IC351	H12	L103A	B5	L301	B16	Q105	F4	R104	C6	R302	B10
C107	B7	C114	C9	C303	C13	C309	D18	C317	F10	C354	K15	C360	J13	C804	K8	CF302	B12	IC801	H7	L103B	B5	L302	A14	Q301	B11	R105	A8	R303	A11

R304	B11	R311	B16	R335	A18	R367	K13	R395	H18	IC101	C5	VR355	J12
R305	A12	R312	E14	R350	K14	R368	J12	R801	K7	VD101	C3	VR801	I4
R307	D17	R313	E9	R351	G14	R390	B18	R802	K7	VD102	C5		
R308	D17	R314	F14	R354	K11	R391	F18	R803	K6	VD103	D6		
R309	D18	R315	C12	R355	K11	R392	E18	R804	F7	VR351	J15		
R310	B18	R318	F16	R356	G16	R393	F18	R805	G9	VR352	G17		



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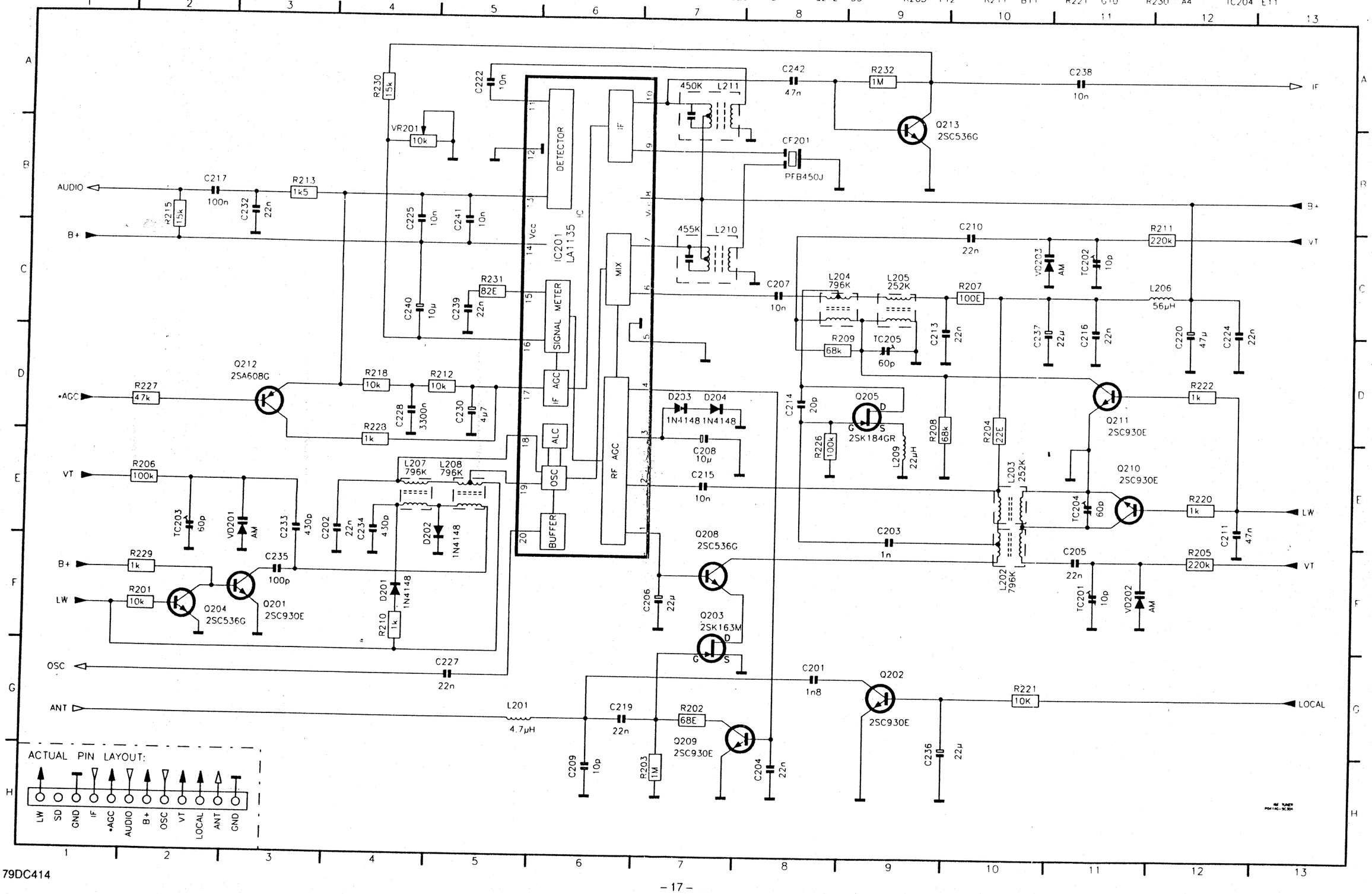
8.4 MW/LW TUNER BOARD

C201	G8	C207	C8	C214	D8	C222	A5	C232	B3	C238	A11	D201	F4	L204	C8	L210	C7	Q205	D9	Q213	A9	R206	E2
C202	F4	C208	D7	C215	E7	C224	D12	C233	F3	C239	C5	D202	F5	L205	C9	L211	A7	Q208	E7	R201	F2	R207	C10
C203	E9	C209	H6	C216	D11	C225	C4	C234	F4	C240	C4	IC201	C6	L206	C11	Q201	F3	Q209	G7	R202	G7	R208	D9
C204	H8	C210	B10	C217	B2	C227	G5	C235	F3	C241	C5	L201	G5	L207	E4	Q202	G9	Q210	E11	R203	H7	R209	D8
C205	F11	C211	E12	C219	G6	C228	D4	C236	H9	C242	A8	L202	F10	L208	E5	Q203	F7	Q211	D11	R204	D10	R210	F4
C206	F7	C213	D9	C220	D12	C230	D5	C237	D10	CF201	B8	L203	E10	L209	E9	Q204	F2	Q212	D3	R205	F12	R211	B11

R212	D4	R222	D12	R231	C5	TC205	D9																
R213	B3	R226	E8	R232	A9	VD201	F3																
R215	C2	R227	D2	TC201	F11	VD202	F11																
R218	D4	R228	D4	TC202	C11	VD203	C10																
R220	E12	R229	F2	TC203	F2	VR201	B4																
R221	G10	R230	A4	TC204	E11																		



CS 35 109

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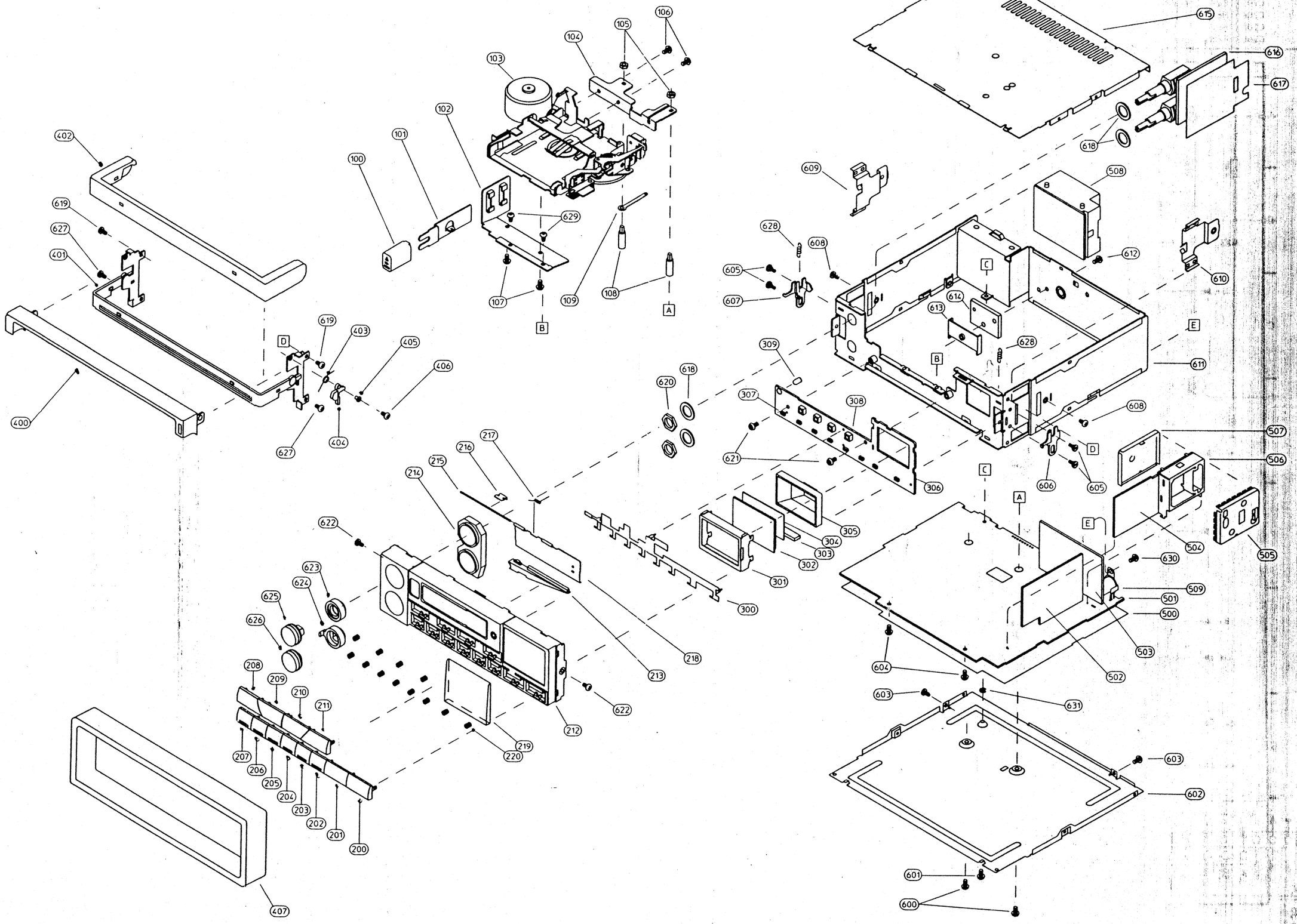
9.0 EXPLODED VIEW



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100		4822 410 61495		308		4822 271 30766	
101		4822 404 21192		309		4822 462 71798	
200	•	4822 410 61485		400	•	4822 460 10981	
201	•	4822 410 61486		401	•	4822 498 10424	
202		4822 410 61494		402	•	4822 498 91042	
203	•	4822 410 61493		403	•	4822 492 42546	
204	•	4822 410 61492		404	•	4822 404 21178	
205	•	4822 410 61491		405	•	4822 532 12111	
206	•	4822 410 61489		407		4822 423 41153	DC404
207	•	4822 410 61488		508		4822 267 20419	
208	•	4822 410 61487		602		4822 423 90181	
209	•	4822 410 61496		615		4822 423 90179	
210	•	4822 410 61497		623	•	4822 413 41674	
211		4822 410 61578		624	•	4822 413 41672	
211	•	4822 410 61498	DC410 only	625	•	4822 413 41673	
212		4822 459 50645	DC404	626	•	4822 413 41671	
212	•	4822 459 50654	DC410				
212		4822 459 50646	DC414				
220	•	4822 492 52293					
301		4822 423 41159					
302		4822 130 91055					
303		4822 466 93053					
304		4822 380 20423					
305		4822 256 91837					
307	•	4822 271 30765					

C15	4822 124 23732	47µF 20% 16V	
C25	4822 126 11473	10pF 5% 50V	
C30	4822 124 23709	10nF 20% 16V	
C70	4822 124 23727	10µF 20% 16V	
C001	4822 122 40296	100nF 20% 16V	
C002	4822 124 40335	1000µF 20% 16V	
C003	4822 124 42263	100µF 20% 16V	
C004	4822 124 42262	220µF 20% 6.3V	
C005	4822 124 23712	100nF 10% 25V	
C006	4822 124 23709	10nF 20% 16V	
C007	4822 124 42263	100µF 20% 16V	
C008	4822 124 23726	100µF 20% 10V	
C009	4822 124 23726	100µF 20% 10V	
C010	4822 124 42296	220µF 20% 6.3V	
C011	4822 124 21694	1000µF 20% 10V	
C012	4822 124 21694	1000µF 20% 10V	
C016	4822 124 23709	10nF 20% 16V	
C017	4822 124 23709	10nF 20% 16V	
C018	4822 124 23709	100nF 20% 16V	
C019	4822 124 23722	2.2µF 20% 16V	
C020	4822 124 23722	2.2µF 20% 16V	
C021	4822 124 23725	0.33µF 20% 25V	
C022	4822 122 40296	100nF 20% 16V	
C023	4822 124 40433	47µF 20% 16V	
C024	4822 124 23709	10nF 20% 16V	
C026	4822 126 11806	1.2nF 20% 16V	
C027	4822 124 23709	10nF 20% 16V	
C028	4822 122 40296	100nF 20% 16V	
C029	4822 124 23709	10nF 20% 16V	
C031	4822 126 11475	1nF 10% 50V	
C032	4822 126 11475	1nF 10% 50V	
C033	4822 124 23709	10nF 20% 16V	
C034	4822 121 70004	1µF 20% 25V	
C035	4822 126 11476	20pF 5% 50V	
C036	4822 126 11476	20pF 5% 50V	
C037	4822 121 70004	1µF 20% 25V	
C038	4822 124 23709	10nF 20% 16V	
C046	4822 124 23709	10nF 20% 16V	
C047	4822 124 23726	100µF 20% 10V	
C048	4822 124 23726	100µF 20% 10V	
C049	4822 124 23709	10nF 20% 16V	
C050	4822 124 23737	2.2µF 20% 50V	
C051	4822 121 42687	3.3nF 10% 50V	
C052	4822 121 42687	3.3nF 10% 50V	
C053	4822 124 23737	2.2µF 20% 50V	
C054	4822 124 42263	100µF 20% 16V	
C055	4822 124	0.47µF 20% 50V	
C056	4822 124 21146	100µF 20% 16V	
C057	4822 121 70019	0.1F 5.5V	DC410, DC414
C057	4822 124 23997	470µF 20% 10V	DC404
C059	4822 124 41794	0.33µF 20% 50V	
C060	4822 124 41794	0.33µF 20% 50V	
C066	4822 124 23709	10nF 20% 16V	
C067	4822 126 11822	680pF 10% 50V	
C068	4822 126 11822	680pF 10% 50V	
C072	4822 124 42296	220µF 20% 6.3V	
C080	4822 124 23709	10nF 20% 16V	
C101	4822 126 11818	18pF 10% 50V	
C102	4822 126 11813	8pF 0.5 50V	
C104	4822 126 11816	1nF 10% 50V	
C105	4822 124 23711	10nF 20% 25V	
C106	4822 126 11812	5pF 0.5 50V	
C107	4822 126 11814	10pF 0.5 50V	
C108	4822 126 11815	100pF 10% 50V	
C110	4822 126 11817	12pF 10% 50V	
C111	4822 126 11811	1pF 0.5 50V	

C112	4822 126 11816	1nF 10% 50V	
C113	4822 124 23711	10nF 20% 25V	
C114	4822 126 11816	1nF 10% 50V	
C115	4822 126 11816	1nF 10% 50V	
C117	4822 124 23711	10nF 20% 50V	
C118	4822 126 11807	22nF 20% 25V	
C201	4822 126 11847	1.8nF 10% 50V	
C202	4822 126 11807	22nF 20% 25V	
C203	4822 126 11816	1nF 10% 50V	
C204	4822 126 11807	22nF 20% 25V	
C205	4822 126 11807	22nF 20% 25V	
C206	4822 124 42306	22µF 20% 16V	
C207	4822 124 23711	10nF 20% 25V	
C208	4822 124 42299	10µF 20% 16V	
C209	4822 126 11814	10pF 0.5 50V	
C210	4822 126 11807	22nF 20% 25V	
C211	4822 126 11809	47nF 20% 25V	
C213	4822 126 11807	22nF 20% 25V	
C214	4822 126 11468	20pF 5%	
C215	4822 124 23711	10nF 20% 25V	
C216	4822 126 11807	22nF 20% 25V	
C217	4822 124 23724	0.1µF 20% 25V	
C219	4822 126 11807	22nF 20% 25V	
C220	4822 124 23746	47µF 20% 16V	
C222	5322 122 32818	2.2nF 10% 50V	
C224	4822 126 11807	22nF 20% 25V	
C225	4822 124 23711	10nF 20% 25V	
C227	4822 126 11807	22nF 20% 25V	
C228	4822 124 23848	3.3µF 20% 50V	
C230	4822 124 23996	4.7µF 20% 50V	
C232	4822 121 70016	22nF 10% 50V	
C233	4822 121 70017	430pF 5% 25V	
C234	4822 121 70018	470pF 5% 25V	
C235	4822 126 11815	100pF 10% 50V	
C236	4822 124 42297	22µF 20% 10V	
C237	4822 124 42306	22µF 20% 16V	
C238	4822 124 23711	10nF 20% 25V	
C239	4822 126 11807	22nF 20% 25V	
C240	4822 124 42298	10µF 20% 16V	
C241	4822 124 23711	10nF 20% 25V	
C242	4822 124 23711	10nF 20% 25V	
C301	4822 124 23711	10nF 20% 25V	
C302	4822 126 11807	22nF 20% 25V	
C303	4822 126 11807	22nF 20% 25V	
C304	4822 126 11807	22nF 20% 25V	
C305	4822 126 11807	22nF 20% 25V	
C306	4822 126 11821	39pF 5% 50V	
C307	4822 124 42267	0.1µF 20% 50V	
C308	4822 122 40296	100nF 20% 16V	
C309	4822 126 11815	100pF 10% 50V	
C310	4822 122 40296	100nF 20% 16V	
C311	4822 124 42268	2.2µF 20% 50V	
C312	4822 126 11807	22nF 20% 25V	
C314	4822 126 11807	22nF 20% 25V	
C315	4822 126 11821	39pF 5% 50V	
C317	4822 126 11821	39pF 5% 50V	
C318	4822 126 11807	22nF 20% 25V	
C350	4822 124 23747	4.7µF 20% 25V	
C351	4822 126 11819	3.3nF 10% 50V	
C352	4822 124 23711	10nF 20% 25V	
C353	4822 124 42265	100µF 20% 10V	
C354	4822 126 11808	33nF 20% 25V	
C355	4822 124 23748	3.3µF 20% 50V	
C356	4822 124 23736	1µF 20% 50V	
C357	4822 126 11807	22nF 20% 25V	
C358	4822 121 70014	15nF 10% 50V	
C359	4822 121 70014	15nF 10% 50V	
C360	4822 124 23736	1µF 20% 50V	
C361	4822 124 11239	1nF 5%	
C390	4822 124 22403	10µF 20% 16V	
C391	4822 122 40296	100nF 20% 16V	
C400	4822 126 11473	10pF 5% 50V	
C401	4822 126 11473	10pF 5% 50V	
C402	4822 124 42265	100µF 20% 10V	
C403	4822 124 23736	1µF 20% 50V	
C404	4822 124 23736	1µF 20% 50V	
C407	4822 124 23996	4.7µF 20% 50V	
C408	4822 124 23736	1µF 20% 50V	
C409	4822 124 23736	1µF 20% 50V	
C410	4822 124 23736	1µF 20% 50V	
C411	4822 124 23736	1µF 20% 50V	
C412	4822 124 23736	1µF 20% 50V	
C413	4822 124 23736	1µF 20% 50V	
C414	4822 124 23996	4.7µF 20% 50V	
C415	4822 124 23709	10nF 20% 16V	
C501	4822 124 80004	0.47µF 20% 50V	
C502	4822 124 80004	0.47µF 20% 50V	
C503	4822 121 70015	18nF 5% 50V	
C504	4822 121 70015	18nF 5% 50V	
C505	4822 126 11471	1.5nF 20% 16V	
C506	4822 126 11471	1.5nF 20% 16V	
C802	4822 124 42266	22µF 20% 10V	
C803	4822 124 23711	10nF 20% 25V	
C804	5322 122 32818	2.2nF 10% 50V	
C805	4822 124 23711	10nF 20% 25V	
C806	4822 126 11809	47nF 20% 25V	
C807	4822 124 23747	4.7µF 20% 25V	
C808	4822 126 11815	100pF 10% 50V	
TC101	4822 125 50309	20pF trimmer	
TC201	4822 125 50601	10pF trimmer	
TC202	4822 125 50601	10pF trimmer	
TC203	4822 125 50377	60pF trimmer	
TC204	4822 125 50377	60pF trimmer	
TC205	4822 125 50377	60pF trimmer	
TC601	4822 125 50309	20pF trimmer	

-R- Main board

R17	4822 050 11003	10k 1% 0.4W
R20	4822 050 11004	100k 1% 0.4W
R001	4822 050 12201	220E 1% 0.4W
R002	4822 050 12201	220E 1% 0.4W
R003	4822 050 11001	100E 1% 0.4W
R004	4822 050 13902	3.9k 1% 0.4W
R005	4822 116 52251	18k 5% 0.5W
R006	4822 050 11001	100E 1% O.4W
R007	4822 050 11003	10k 1% 0.4W
R009	4822 050 15601	560E 1% 0.4W
R011	4822 050 11003	10k 1% 0.4W
R012	4822 050 11003	10k 1% 0.4W
R013	4822 050 11003	10k 1% 0.4W
R014	4822 050 11002	1k 1% 0.4W
R015	4822 050 13302	3.3k 1% 0.4W
R016	4822 050 16801	680E 1% 0.4W
R018	4822 050 11002	1k 1% 0.4W
R019	4822 050 11002	1k 1% 0.4W
R021	4822 050 15601	560E 1% 0.4W
R022	4822 050 14703	47k 1% 0.4W
R024	4822 050 12209	22E 1% 0.4W
R025	4822 050 11002	1k 1% 0.4W
R026	4822 050 15602	5.6k 1% 0.4W
R027	4822 050 12203	22k 1% 0.4W
R028	4822 050 12203	22k 1% 0.4W

-R- Main board (continued)

R029	4822 050 11001	100E 1% 0.4W
R031	4822 050 11003	10k 1% 0.4W
R032	4822 116 52264	27k 5% 0.5W
R034	4822 050 11004	100k 1% 0.4W
R035	4822 050 11002	1k 1% 0.4W
R036	4822 050 14701	470E 1% 0.4W
R037	4822 050 13302	3.3k 1% 0.4W
R038	4822 050 16802	6.8k 1% 0.4W
R039	4822 050 11003	10k 1% 0.4W
R040	4822 111 50575	82k 5% 0.125W
R041	4822 111 50575	82k 5% 0.125W
R042	4822 050 11001	100E 1% 0.4W
R043	4822 111 50573	270k 5% 0.125W
R044	4822 111 50569	12k 5% 0.125W
R045	4822 050 11001	100E 1% 0.4W
R046	4822 111 50573	270k 5% 0.125W
R047	4822 111 50569	12k 5% 0.125W
R048	4822 050 14703	47k 1% 0.4W
R049	4822 050 14703	47k 1% 0.4W
R050	4822 111 50574	390E 5% 0.125W
R051	4822 050 11002	1k 1% 0.4W
R052	4822 050 11003	10k 1% 0.4W
R053	4822 050 11002	1k 1% 0.4W
R054	4822 050 11002	1k 1% 0.4W
R055	4822 050 12203	22k 1% 0.4W
R056	4822 050 11003	10k 1% 0.4W
R057	4822 050 12203	22k 1% 0.4W
R058	4822 111 50569	12k 5% 0.125W
R059	4822 111 50569	12k 5% 0.125W
R060	4822 050 14702	4.7k 1% 0.4W
R061	4822 111 50571	120k 5% 0.125W
R062	4822 111 50571	120k 5% 0.125W
R063	4822 050 11004	100k 1% 0.4W
R064	4822 050 11004	100k 1% 0.4W
R065	4822 050 12203	22k 1% 0.4W
R066	4822 050 12203	22k 1% 0.4W
R067	4822 111 50572	2.7k 5% 0.125W
R068	4822 111 50578	10E 5% 0.5W
R069	4822 111 50568	10E 5% 0.125W
R070	4822 111 50577	390E 5% 0.25W
R071	4822 111 50578	10E 5% 0.5W
R072	4822 111 50576	330E 5% 0.25W
R073	4822 050 14703	47k 1% 0.4W
R074	4822 050 15602	5.6k 1% 0.4W
R078	4822 050 11003	10k 1% 0.4W
R079	4822 050 11003	10k 1% 0.4W
R080	4822 050 12204	220k 1% 0.4W
R081	4822 111 50572	2.7k 5% 0.125W
R086	4822 050 15602	5.6k 1% 0.4W
R092	4822 050 12209	22E 1% 0.4W
R094	4822 116 52251	18k 5% 0.5W
R096	4822 050 12203	22k 1% 0.4W
R101	4822 050 12203	22k 1% 0.4W
R116	4822 111 50572	2.7k 5% 0.125W
R130	4822 050 11003	10k 1% 0.4W
R151	4822 050 15601	560E 1% 0.4W
R160	4822 050 12202	2.2k 1% 0.4W
VR1	4822 100 11614	2k

-R- FM board

R101	4822 050 24703	47k 1% 0.6W
R102	4822 050 24703	47k 1% 0.6W
R103	4822 111 50597	100E 5% 0.25W
R104	4822 050 24703	47k 1% 0.6W
R105	4822 050 22205	2.2M 1% 0.6W
R106	4822 050 21003	10k 1% 0.6W

-R- FM board (continued)

R107	4822 111 50597	100E 5% 0.25W
R110	4822 050 21003	10k 1% 0.6W
R301	4822 050 12209	22E 1% 0.4W
R302	4822 050 13301	330E 1% 0.4W
R303	4822 111 50592	470k 5% 0.125W
R304	4822 050 13301	330E 1% 0.4W
R305	4822 111 50588	3.3k 5% 0.125W
R307	4822 116 52264	27k 5% 0.125W
R308	4822 111 50569	12k 5% 0.125W
R309	4822 116 52251	18k 5% 0.125W
R310	4822 050 11003	10k 1% 0.4W
R311	4822 050 11503	15k 1% 0.4W
R312	4822 111 50589	33k 5% 0.125W
R313	4822 111 50582	1M 5% 0.125W
R314	4822 111 50591	39k 5% 0.125W
R315	4822 050 13301	330E 1% 0.4W
R318	4822 050 14703	47k 1% 0.4W
R335	4822 050 11004	100k 1% 0.4W
R350	4822 111 50584	1.8k 5% 0.125W
R351	4822 111 50581	1k 5% 0.125W
R354	4822 050 13302	3.3k 1% 0.4W
R355	4822 111 50588	3.3k 5% 0.125W
R356	4822 111 50569	12k 5% 0.125W
R367	4822 050 14703	47k 1% 0.4W
R368	4822 111 50588	3.3k 5% 0.125W
R390	4822 050 11503	15k 1% 0.4W
R391	4822 111 50594	56k 5% 0.125W
R392	4822 050 14703	47k 1% 0.4W
R393	4822 050 12203	22k 1% 0.4W
R395	4822 050 11003	10k 1% 0.4W
R801	4822 050 14703	47k 1% 0.4W
R802	4822 111 50596	6.8k 5% 0.125W
R803	4822 111 50593	5.6k 5% 0.125W
R804	4822 111 50587	2.2k 5% 0.125W
R805	4822 111 50585	18k 5% 0.125W
VR351	4822 100 11813	100k
VR352	4822 100 11814	10k
VR355	4822 100 11735	10k
VR801	4822 100 11814	10k

-R- AM board

R201	4822 050 11003	10k 1% 0.4W
R202	4822 111 50595	68E 5% 0.125W
R203	4822 050 11005	1M 1% 0.4W
R204	4822 050 12209	22E 1% 0.4W
R205	4822 050 12204	220k 1% 0.4W
R206	4822 050 11004	100k 1% 0.4W
R207	4822 050 11001	100E 1% 0.4W
R208	4822 050 16803	68k 1% 0.4W
R209	4822 050 16803	68k 1% 0.4W
R210	4822 050 11002	1k 1% 0.4W
R211	4822 050 12204	220k 1% 0.4W
R212	4822 050 11003	10k 1% 0.4W
R213	4822 050 11502	1.5k 1% 0.4W
R215	4822 050 11503	15k 1% 0.4W
R218	4822 050 11003	10k 1% 0.4W
R220	4822 050 11002	1k 1% 0.4W
R221	4822 050 11003	10k 1% 0.4W
R222	4822 050 11002	1k 1% 0.4W
R226	4822 050 11004	100k 1% 0.4W
R227	4822 050 14703	47k 1% 0.4W
R228	4822 050 11002	1k 1% 0.4W
R229	4822 050 11002	1k 1% 0.4W
R230	4822 111 50583	15k 5% 0.125W
R231	4822 050 18209	82E 1% 0.4W
R232	4822 111 50582	1M 5% 0.125W
VR201	4822 100 11814	10k

-R- Tape board

R400	4822 050 15602	5.6k 1% 0.4W
R401	4822 050 15604	560k 1% 0.4W
R402	4822 050 15604	560k 1% 0.4W
R403	4822 050 14701	47OE 1% 0.4W
R404	4822 050 15602	5.6k 1% 0.4W
R405	4822 050 14701	470e 1% 0.4W
R406	4822 050 11004	100k 1% 0.4W
R407	4822 050 11004	100k 1% 0.4W
R408	4822 050 11005	1M 1% 0.4W
R409	4822 050 11005	1M 1% 0.4W
R410	4822 050 11004	100k 1% 0.4W
R411	4822 050 11004	100k 1% 0.4W
R412	4822 050 15601	560E 1% 0.4W
R413	4822 050 11003	10k 1% 0.4W
R414	4822 050 11003	10k 1% 0.4W
R415	4822 050 12202	2.2k 1% 0.4W
R416	4822 050 12202	2.2k 1% 0.4W
R417	4822 050 11003	10k 1% 0.4W
R418	4822 050 11003	10k 1% 0.4W
R419	4822 050 11003	10k 1% 0.4W
R420	4822 050 11003	10k 1% 0.4W
R421	4822 050 11002	1k 1% 0.4W
R422	4822 050 11003	10k 1% 0.4W
R423	4822 050 14703	47k 1% 0.4W
R424	4822 116 52251	18k 5% 0.125W
R425	4822 050 11004	100k 1% 0.4W
R426	4822 050 14703	47k 1% 0.4W

-R- Audio control board

R501	4822 050 11003	10k 1% 0.4W
R502	4822 050 11003	10k 1% 0.4W
R503	4822 050 14702	4.7k 5% 0.4W
R504	4822 050 14702	4.7k 5% 0.4W
R505	4822 050 15602	5.6k 1% 0.4W
R506	4822 050 15602	5.6k 1% 0.4W
R507	4822 111 50586	2k 5% 0.125W
R508	4822 111 50586	2k 5% 0.125W
R509	4822 116 52251	18k 5% 0.125W
R510	4822 116 52251	18k 5% 0.125W
VR501	4822 101 50284	Potm. VOL/BAL + switch on-off/search
VR502	4822 100 20847	Potm. TONE 50k

-R- Keyboard

R1	4822 116 83538	180E 5% 0.125W

L2	4822 158 50067
L3	4822 156 21434
L101A	4822 157 63498
L101B	4822 157 63501
L102	4822 157 63516
L103A	4822 157 63499
L103B	4822 157 63502
L104	4822 156 21647
L105	4822 157 63517
L106	4822 157 53773
L107	4822 157 63521
L201	4822 157 53774
L202	4822 157 63566
L203	4822 157 63567
L204	4822 157 63568
L205	4822 157 63569
L206	4822 157 63565
L207	4822 157 63571
L208	4822 157 63572
L209	4822 158 50066
L210	4822 157 63573
L211	4822 157 63574
L301	4822 157 63522
L302	4822 157 53774

	4822 130 82577	4.1-4.3V Zener
	4822 130 82757	5.6V Zener
	4822 130 82756	10.1V Zener
	4822 130 60379	LLP-204HYO LED orange
	4822 130 82869	SLP-235B-51 LED green
	4822 130 82788	SVC21 Varicap
	4822 130 82777	SVC321-D Varicap
	4822 130 31438	1N4001
	4822 130 30621	1N4148
	4822 130 82582	2A

	4822 130 40964	BC549
	4822 130 44246	BC549C
	4822 130 62718	JE8050C
	4822 130 61838	JE8550C
	4822 130 62842	2N5484
	4822 130 62205	2SA608G
	4822 130 42298	2SC536G
	4822 130 62838	2SC930E
	4822 130 41198	2SC945P
	4822 130 60886	2SC1923Y
	4822 130 61748	2SC2668-0
	4822 130 62841	2SK161Y
	4822 130 42833	2SK163M
	4822 130 62722	2SK184GR
	4822 130 62721	2SJ40E
	4822 130 62839	3SK107F

IC1	4822 209 30392	TC9309F-015 µC
IC2	4822 209 81928	µPC1228HA pre-amp.
IC3	4822 209 12342	TDA1519 AF amp.
IC201	4822 209 81217	LA1135 AM-osc/mix/IF
IC301	4822 209 30391	LA1140 FM/IF
IC351	4822 209 81774	LA3375 FM MPX
IC400	4822 214 51874	THI-FI unit SDK
IC801	4822 209 63916	LA2110 interf. suppr.
IC802	4822 209 63918	DN1360E hi/lo pass

Miscellaneous

CF201	4822 242 80996	Ceram. filter 450kHz
CF301	4822 242 70612	Ceram. filter 10.7MHz
CF302	4822 242 70612	Ceram. filter 10.7MHz
M1	4822 134 40855	Lamp 14V 40mA
M2	4822 134 40855	Lamp 14V 40mA
M3	4822 134 40855	Lamp 14V 40mA
XT1	4822 242 80363	Crystal 7.2 MHz

CS 35 112